CONTENTS FOR
HEAT TRANSFER-Japanese Research
Volume 16, Nos. 1-6, 1987

NUMBER 1

1 Performance Evaluation of Forced Stratified Thermal Energy Storage Tank and Comparison with the Perfect Stratified and the Perfect Mixed Thermal Energy Storage Tank
Yoshihiro Nakashima, Itiro Fujiwara and Totaro Goto

13 Temperature Rise in Brittle Materials by a Rotating Friction Mill
Syoichi Morohashi, Nobuichi Ohi, Isamu Matsubara and Saburo Yashima

32 Solidification Interface Shape in Plane Channel Flow Subjected to Wall Cooling
Eiji Hasegawa, Fumio Nagashima and Toshiro Washizaki

49 Heat Transfer from a Two-Dimensional Film Cooled Gas Turbine Blade
Shinzo Kikkawa and Masaru Hayashida

72 Natural Convection from a Horizontal Surface (Effect of a Rectangular Obstacle above an Upward-Facing Horizontal Surface with a Strip Heat Source)
Masanori Takeuchi, Naomichi Heya, Teruo Kimura and Masahito Takamatsu

91 Optimization and Heat Transfer for a Vertical Fin Array on Isothermal and Nonisothermal Plane Surfaces with Combined Natural Convection and Radiation
Sadayuki Tanaka, Toshimi Yoshida and Takeshi Kunitomo

NUMBER 2

1 Shell-Side Single-Phase Flows and Heat Transfer in Shell-and-Tube Heat Exchangers (Part 2: Effects of Inlet Nozzle Diameter on Flow Patterns and Local Heat Transfer Coefficients)
Hitoshi Matsushima, Wataru Nakayama, Takehiko Yanagida, and Akio Kudo

15 Natural Convection Heat Transfer in a Trapezoidal Enclosure (Experimental Investigation)
Teruo Kimura, Naomichi Heya, Masanori Takeuchi and Takio Usui

27 Heat Transfer Enhancement on a Rotating Cylinder by Means of Turbulence Promoter with a Slit
Ryohachi Shimada, Satoshi Kumagai and Toshiro Takeyama

41 Natural Convection Heat Transfer of Two Stratified Fluid Layers in a Rectangular Enclosure
Teruo Kimura, Naomichi Heya, Masanori Takeuchi and Hideaki Isomi

57 Flashing Flow in a Horizontal Pipe during Rapid Depressurization (Part 1: Visual Observation of Flow Patterns and Pressure Transients)
Fumito Kaminaga

69 Boiling Heat Transfer from Circular Surfaces with Rectangular Fin Array
Satoshi Kumagai, Shi Gie Jho, Yoichi Hirono, Ryohachi Shimada, and Toshiro Takeyama

82 Effects of Lateral Walls on the Stability of Natural Convection in an Inclined Fluid Layer
Takashi Masuoka and Gen Shimizu

92 Fundamental Study of Fluidized Bed Heat Exchangers
Yusumi Nagahashi, Naomichi Hirayama and Nobuyoshi Suzuki

NUMBER 3

1 Average Heat Transfer Coefficient Between the Gas and Tiles in a Tunnel Kiln of Roofing Tiles
Manabu Takatsu and Yoshitaka Togari

8 The Effect of the Onset of Ice-Band Structure Upon the Freezing of Flowing Water in a Pipe
Tetsuo Hirata

17 Evaporation Behavior of Liquid Drops on the Surface of Hot Liquids
Takeo Takashima and Yoshihiro Iida

29 Precise Measurement of Thermophysical Properties of Solids by a Direct Electrical Heating Method (Part 1: Measurement and Theoretical Evaluation of Accuracy of a Circular Rod Sample)
Ichiro Takahashi, Akira Sugawara, Hidenobu Mifune and M.T.V. Rezende

47 Heat Transfer Mechanism of Circular Open Thermosyphon (Part II: Working Fluids: Water and Ethylene Glycol)
Hideaki Yamagishi, Ryoji Ishiguro and Toshiaki Kumada

62 Wall Heat Transfer in Countercurrent Moving Beds
Hiroshi Takahashi and Takao Takeuchi

79 Heat Transfer in Separated Flow Regions of a Backward Facing Step with "V"-Notches
Ikuo Mabuchi, Takao Kawamura, Masumi Itoh and Masaya Kumada

96 Laminar Pulsating Mass Transfer in a Flat Plate Parallel Channel
Ryuhei Yamaguchi

NUMBER 4

1 Boiling Heat Transfer and Electric Breakdown of Fluorocarbon $C_2Cl_3F_3$ and $C_8F_{16}O$ in a Uniform Electric Field
Masao Fujii, Minoru Hanasaki, Yoshiyuki Yasojima, and Goro Yamanaka

17 A New Thermal Conductivity Correlation Applicable to Vapor and Saturated Regions
Yoshiki Shigaki, Seiji Togawa and Kunio Yoshida

24 Effects of Artificial Roughness Elements for Heat Transfer and Flow on a Smooth Heated Wall in a Parallel Plate Duct
Koichi Ichimiya and Masato Yokoyama

40 Melting Around a Horizontal Cylinder Imbedded in a Frozen Porous Medium
Masashi Okada and Takashi Fukumoto

55 Natural Convection of a Heat Generating Fluid Confined in a Frozen Layer within a Horizontal Cylinder
Koshi Mitachi, Katsuyuki Aoki, Kenzo Kitamura, and Masami Furuuchi

78 Studies on a High Temperature Regenerative Heat Exchanger for a Closed Cycle MHD Power Generation (Two-Dimensional Heat Transfer Analysis)
Kunio Yoshikawa, Shigeharu Kabashima and Susumu Shioda

NUMBER 5

1 Heat Transfer Correlations of Rifled Tubing for Boilers Under Sliding Pressure Operating Condition
Tokuji Matsuo, Makio Iwabuchi, Mitsuo Kanzaka, Hisao Haneda, and Kenjirou Yamamoto

14 Behavior of Bénard Convection with Change of Entropy
Yoshiro Inoue and Ryuzo Ito

26 Flow and Heat Transfer of a Gas and Liquid Two-Phase Flow in Helical Coils
Osamu Watanabe, Osamu Tajima, Masahiro Shimoya, and Toshikatsu Nakano

42 Natural Convection Heat Transfer in a Rectangular Cell Enclosed with Vertical Walls and Plate-Fins
Masashi Okada and Hiroshi Okano

56 Heat Transfer and Pressure Drop Characteristics in a Converging-Diverging Duct with Rounded Corners
Yutaka Asako, Hiroshi Nakamura and Mohammad Faghri

70 Critical Heat Flux in Saturated Forced Convective Boiling on a Heated Disk with an Impinging Jet
Masanori Monde, Osamu Nagae and Yoriyuki Ishibashi

83 Rate Enhancement of the Dehydration of $Ca(OH)_2$ Under Reduced Pressure (Thermal Storage)
Soo Kag Lee, Hitoki Matsuda and Masanobu Hasatani

NUMBER 6

1 Motion of a Liquid around a Vapor Bubble in Saturated Pool Nucleate Boiling in the Region of Isolated Bubbles and Prediction of Heat Transfer Coefficients
Akio Nakayama and Matsutaro Kano

23 Frequency Response Characteristics of One-Dimensional Heat Conduction within Laminated Binary Materials
Masayuki Gotoh, Shigeru Matsumoto and Mutsumi Suzuki

30 Bénard Convection in an Annular Vessel
Ryuzo Ito, Yoshiro Inoue and Katsuya Ujita

48 Boiling Heat Transfer on a Fine Horizontal Wire in a Refrigerant-Oil Mixture
Masanori Monde and Erich Hahne

61 Convective Heat Transfer with an Evaporation of Suspended Spray Droplets (Part 1, Theoretical Analysis)
Akira Takimoto, Osamu Matsuda and Yujiro Hayashi

77 Study on Combined Latent- and Sensible-Heat Thermal Storage
Yujiro Hayashi, Akira Takimoto and Seiji Kawahara